Tactical Combat Casualty Care Update: 2015

Naval Aeromedical Conference

14 January 2015

Disclaimer

“The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Departments of the Army, Air Force, Navy or the Department of Defense.”

Joint Trauma System Overview

Coalition forces at this point in time have the best definitive care and evacuation system in histo

CC's job is to make sure that the casualties ge
e hospital alive so that they can benefit from
% of combat fatalities die in the <u>prehospital</u> ph

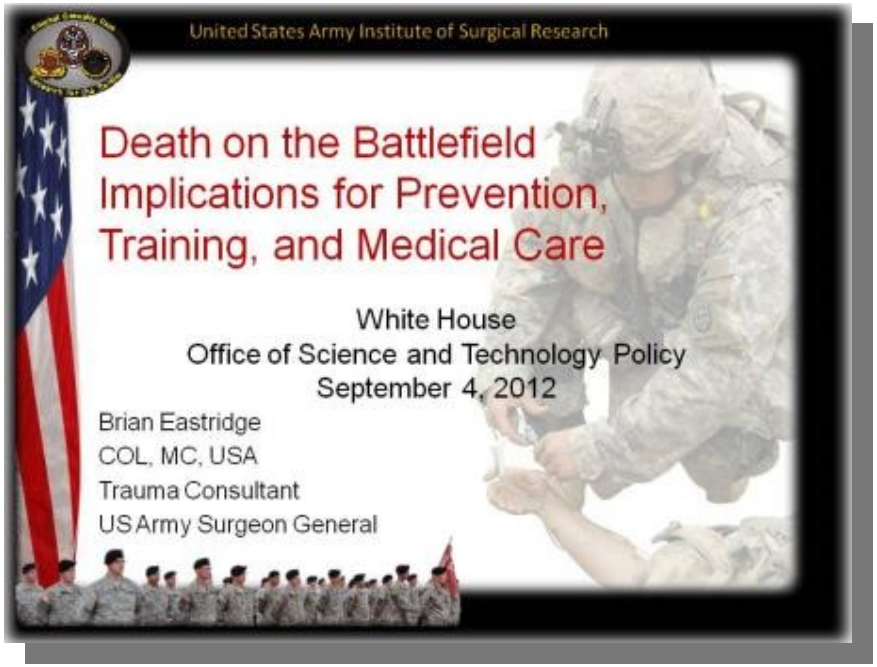
Tactical Combat Casualty Care

TCCC

- **Medics, Corpsmen, PJs**
- **Combat Lifesavers**
- **All Combatant Self/Buddy Care**
- **Includes Tactical Evacuation Care**

Photo – MSG Harold Montgomery

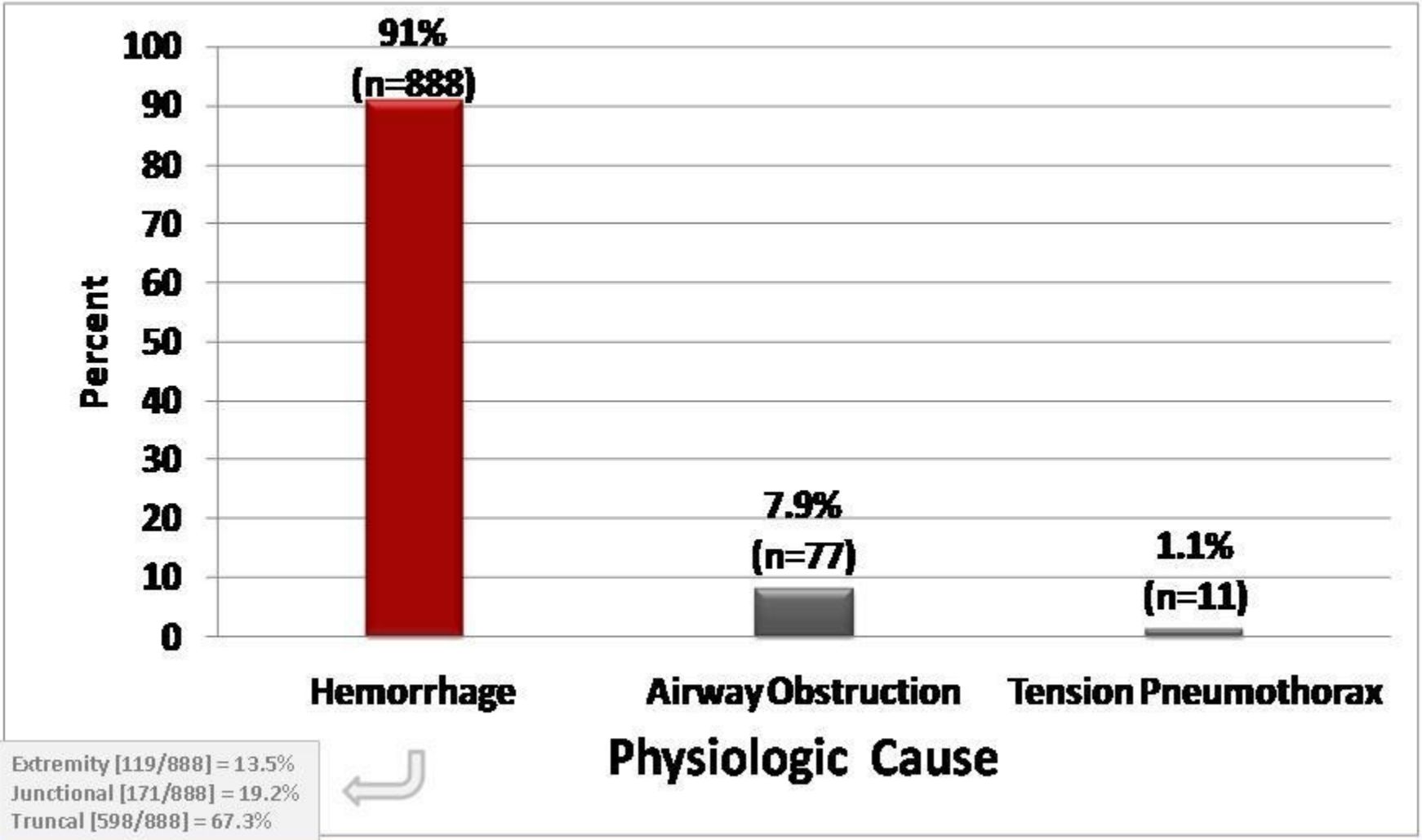
Preventable Death on the Battlefield: OEF and OIF


United States Army Institute of Surgical Research
Death on the Battlefield
Implications for Prevention, Training, and Medical Care
White House
Office of Science and Technology Policy
September 4, 2012
Brian Eastridge
COL, MC, USA
Trauma Consultant
US Army Surgeon General

Eastridge 2012 Study

- **4,596 U.S. deaths**
- **87% of combat fatalities were pre-hospital**
- **24% of these deaths were potentially**

What is the Cause of Death?



Eastridge BJ, Mabry RL, Seguin PG, et al. Death on the battlefield (2001-2011): implications for the future of combat casualty care. Journal of Trauma, 2012. In press.

BLUF

- **The U.S. military was not optimally prepared to**

  care for combat casualties at the start of OEF.
- **We have made great advances in trauma care in**

  the last 13 years, both in TCCC and in the JTS

  CPGs, BUT these advances have at present

  been unevenly incorporated into both ou

Battlefield Trauma Care: Then (2001)

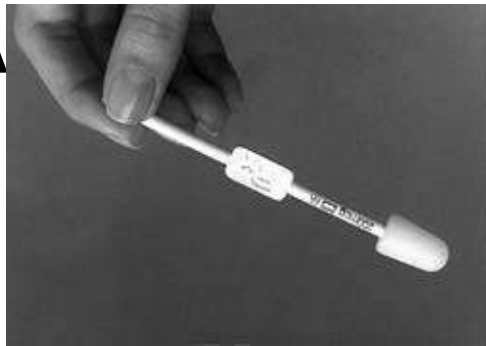
- **Based on trauma courses NOT developed for combat**
- **Medics taught NOT to use tourniquets**
- **No hemostatic agents**
- **No junctional tourniquets**
- **Large volume crystalloid fluid resuscitation for shock**
- **2 large bore IVs on all casualties with significant trauma**
- **Civil War-vintage technology for battlefield analgesia (IM morphine)**
- **No focus on prevention of trauma-related coagulopathy**

Preventable Combat Deaths from Not Using Tourniquets

- **Maughon – *Mil Med 1970*: Vietnam**
  - **193 of 2,600**
  - **7.4% of total fatalities**
- **Kelly – *J Trauma 2008*: OEF + OIF (2006)**
  - **77 of 982**
  - **7.8% of total fatalities – no better then Vietnam**
- **Eastridge – *J Trauma 2012*: OEF + OIF**

Battlefield Trauma Care: Now

- Phased care in TCCC
- Aggressive use of tourniquets in
- Combat Gauze as hemostatic age
- Aggressive needle thoracostomy
- Sit up and lean forward airway positio
- Surgical airways for maxillofacial trau
- Hypotensive resuscitation with Hexter
- IVs only when needed/IO access if req
- PO meds, OTFC, ketamine as “Triple O for battlefield analgesia
- Hypothermia prevention; avoid NSA
- Battlefield antibiotics
- Tranexamic acid
- Junctional Tourniquets



TCCC: A Brief History

- Original paper published 1996
- First used by Navy SEALs, Army Rangers, and Air Force Pararescue in 1997
- Updates published in PHTLS manual since 1999
- ACS COT and NAEMT endorsement
- USSOCOM adopted in 2005
- Now used throughout the U.S. military
- Allied nations and civilian sector

Eliminating Preventable Death on the Battlefield

Kotwal et al – Archives of Surgery 2011

All Rangers and docs trained in TCCC

U.S. military preventable deaths: 24%

Ranger preventable death incidence: 3%

Committee on Tactical Combat Casualty Care (CoTCCC)

- **First funded by USSOCOM in 2001-2002 at the Naval Operational Medicine Institute (NOMI)**
- **Later sponsored by Navy and Army Surgeons General, U.S. Army Institute of Surgical Research and the Joint Trauma System**
- **42 members - all services**
- **Trauma Surgery, EM, Critical Care, operational physicians and PAs; medical educators; combat medics, corpsmen, and PJs**
- **100% deployed experience**
- **Relocated to the Defense Health Board**

TCCC Team 2014
CoTCCC/JTS PLUS

- Prehospital Trauma Life Support/NAEMT
- Trauma and Injury Subcommittee - DHB
- Special Operations Medicine
- Designated TCCC Experts
- Service Surgeons General/TMO offices
- COCOM Surgeons' offices
- Other government agencies
- USAISR + other military medical research labs
- Coalition partner nations
- Defense Health Agency – MEDLOG
- Armed Forces Medical Examiner System
- Combat medical schoolhouses

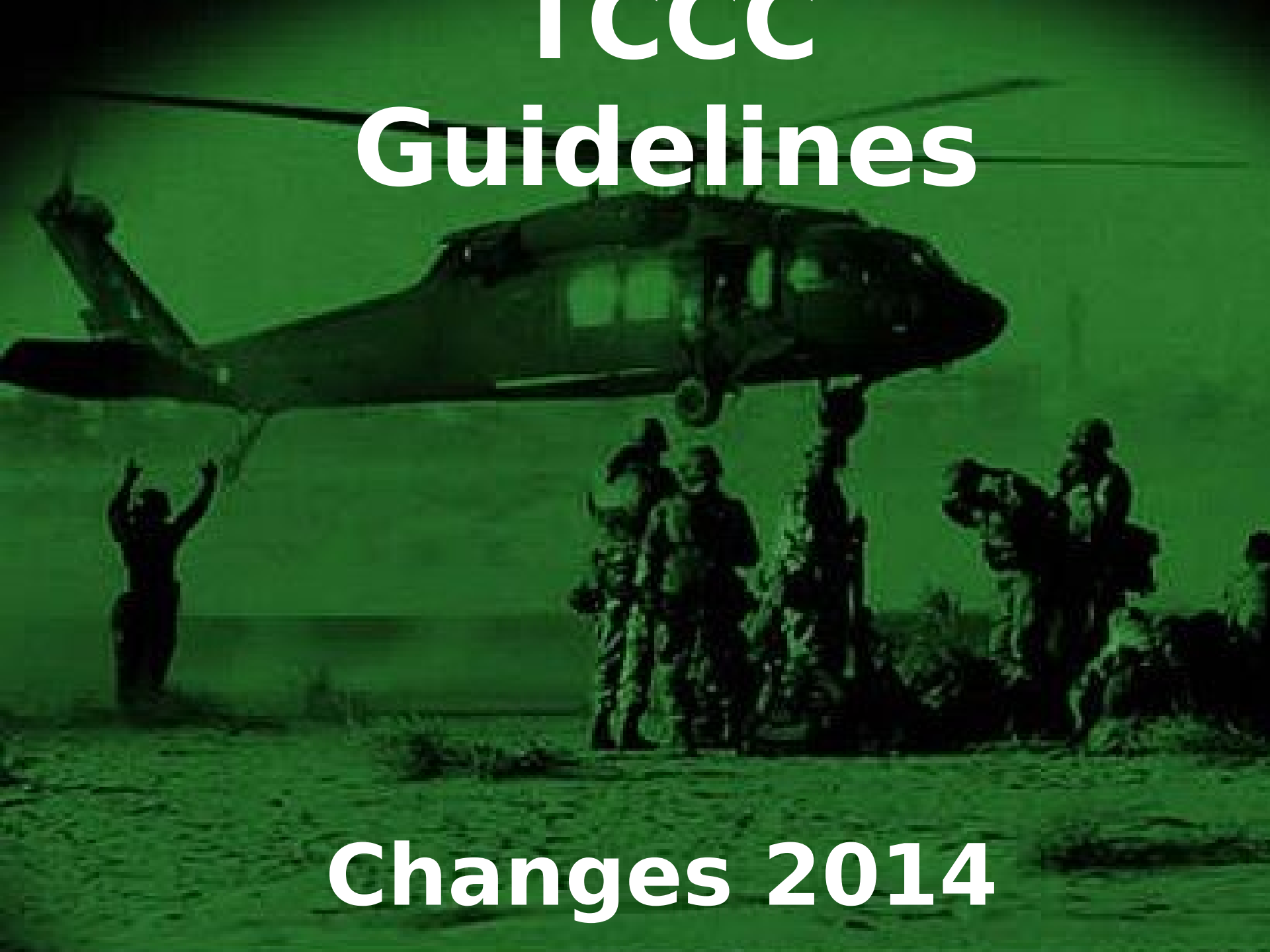
TCCC Guidelines Changes 2010-2012

- **Fluid resuscitation in TACEVAC (1:1 FFP/PRBCs when feasible) - 2010**
- **Combat Ready Clamp - 2011**
- **Tranexamic Acid - 2011**
- **Bilateral needle decompression in traumatic cardiac arrest - 2011**
- **Ketamine as an analgesic option in TCCC - 2012**
- **Management of TBI in TCCC - 2012**
- **Supraglottic Airways - 2012**
- **Lateral site for needle decompression -**

TCCC Guidelines Changes 2013

- Updated TCCC Card (DD Form 1380)
  - And the accompanying AAR
- Vented chest seals
- Additional junctional tourniquets
  - JETT and SAM Junctional Splint
- Triple-Option Analgesia Strategy
- Hemostatic dressings
  - Added Celox Gauze and ChitoGauze as backups

TCCC Guidelines



Changes 2014

All TCCC change papers are now published in the JSOM

Est. 2000
JOURNAL of SPECIAL OPERATIONS MEDICINE™
A Peer Reviewed Journal that Brings Together the International Interests of First Responders in the SOF Medical and TEMS Community
Inside this Issue:
Exertional Heat Stroke
Heat Injury in the SOF Multipurpose Canine
Survivability After Hemorrhage Increased With Salmon Thrombin-Fibrin Dressing
NATO Spec Ops Medical Engagements and Partnering
Preparing Soldiers for the Stress of Combat
PTSD: An Elusive Definition
Regimented Techniques Facilitate a Rapid Ascent to Very High Altitude
Ophthalmic Trauma in the Field
Comparison of Airway Control Methods and Ventilation Success
Military Physician Training Leaves the Halsted Era Behind
An MRI Study to Define Optimal Needle Length for Humeral Head IO Devices
A Review of Shoulder Reduction Techniques
Dedicated to the Indomitable Spirit and Sacrifices of the SOF Medic
Plus… TCCC and TEMS Updates, and more

Tactical Combat Casualty Care Guideline Change 13-05:

FEATURE ARTICLES

Management of External Hemorrhage in Tactical Combat Casualty Care: Chitosan-Based Hemostatic Gauze Dressings

TCCC Guidelines – Change 13-05

Brad L. Bennett, PhD, NREMT-P; Lanny F. Littlejohn, MD; Bijan S. Kheirabadi, PhD; Frank K. Butler, MD; Russ S. Kotwal, MD; Michael A. Dubick, PhD; Jeffrey A. Bailey, MD

23 March 2014

Alternative Hemostatic Dressings

- **Celox Gauze and ChitoGauze are as effective as Combat Gauze at hemorrhage control in laboratory studies:**
  - **Rall JM, Cox JM, Songer AG, et al. Comparison of novel hemostatic gauzes to QuikClot Combat Gauze in a standardized swine model of uncontrolled hemorrhage. J Trauma Acute Care Surg. 2013; 75(2 Suppl 2):S150-6.**
  - **Satterly S, Nelson D, Zwintscher N, et al. Hemostasis in a noncompressible hemorrhage model: An end-user evaluation of hemostatic agents in a proximal arterial injury. J Surg Educ. 2013;70(2):206-11.**
  - **Watters JM, Van PY, Hamilton GJ, et al. Advanced hemostatic dressings are not superior to gauze for care under fire scenarios. J Trauma 2011;70:1413-18.**
  - **Schwartz RB, Reynolds BZ, Shiver SA, et al. Comparison of two packable hemostatic Gauze dressings in a porcine hemorrhage model. Prehosp Emerg Care 2011;15:477-482**

Alternative Hemostatic Dressings

- **Neither ChitoGauze nor Celox Gauze have been tested in the USAISR safety model, but**
- **Chitosan-based hemostatic dressings have been used in combat since 2004 with no safety issues reported.**

Tactical Field Care Guidelines

4. Bleeding

b. For compressible hemorrhage not amenable to tourniquet use or as an adjunct to tourniquet removal (if evacuation time is anticipated to be longer than two hours), **use Combat Gauze as the CoTCCC hemostatic dressing of choice. Celox Gauze and ChitoGauze may also be used if Combat Gauze is not available. Hemostatic dressings should be applied with at least 3 minutes of direct pressure.** ….

Tactical Combat Casualty Care Guideline Change 14-01

Fluid Resuscitation for Hemorrhagic Shock in Tactical Combat Casualty Care

TCCC Guidelines Change 14-01 – 2 June 2014

Frank K. Butler, MD; John B. Holcomb, MD; Martin A. Schreiber, MD; Russ S. Kotwal, MD; Donald A. Jenkins, MD; Howard R. Champion, MD, FACS, FRCS; F. Bowling; Andrew P. Cap, MD; Joseph J. Dubose, MD; Warren C. Dorlac, MD; Gina R. Dorlac, MD; Norman E. McSwain, MD, FACS; Jeffrey W. Timby, MD; Lorne H. Blackbourne, MD; Zsolt T. Stockinger, MD; Geir Strandenes, MD; Richard B, Weiskopf, MD; Kirby R. Gross, MD; Jeffrey A. Bailey, MD

2 June 2014

Fluid Resuscitation from Hemorrhagic Shock

Why a change was needed:

- Last TCCC update on fluid resuscitation was November 2011
- In the interim, there have been a number of publications related to:
  - Hypotensive resuscitation
  - Dried plasma
  - Adverse effects from resuscitation with both crystalloids and colloids
  - Prehospital resuscitation with thawed and liquid plasma and RBCs
  - The benefits of fresh whole blood (FWB) use
  - Resuscitation from controlled hemorrhage shock

Fluid Resuscitation from Hemorrhagic Shock

Why a change was needed

- Additionally, recently published studies describe an increased use of blood products by coalition forces in Afghanistan during Tactical Evacuation (TACEVAC) Care and even in Tactical Field Care (TFC).
- Resuscitation with RBCs and plasma has been associated with improved survival on the platforms that use them, even in the relatively short evacuation times seen in Afghanistan in recent years.
- Future conflicts in other geographic combatant commands such as the U.S. Pacific Command (PACOM), the U.S. Southern Command (SOUTHCOM), and the U.S. Africa Command (AFRICOM) may have prolonged evacuation times and may include the need to consider pre-evacuation treatment aboard ships at sea.

Fluid Resuscitation from Hemorrhagic Shock

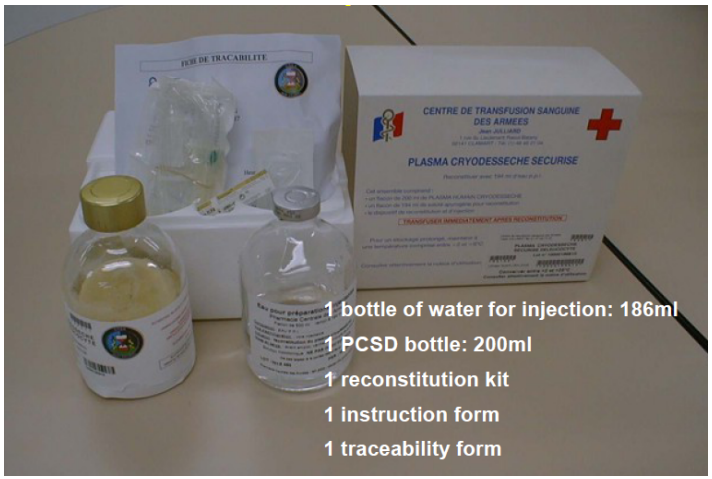
What this change does

- Provides an order of precedence for resuscitation fluids
- Documents the evidence for the order recommended
- Encourages the use of prehospital blood components when feasible, to include Tactical Field Care in some settings

Fluid Resuscitation from Hemorrhagic Shock

What this change does

- Makes the fluid resuscitation plan the same for both TFC and TACEVAC Care
- Incorporates dried and liquid plasma into the fluid options


FEUILLE DE TRACABILITE
CENTRE DE TRANSFUSION SANGUINE DES ARMEES
PLASMA CRYODESSECHE SECURISE
1 bottle of water for injection: 186ml
1 PCSD bottle: 200ml
1 reconstitution kit
1 instruction form
1 traceability form

Fluid Resuscitation from Hemorrhagic Shock

Updated Fluid Resuscitation Plan

Order of precedence for fluid resuscitationof casualties in hemorrhagic shock

1. Whole blood
2. 1:1:1 plasma:RBCs:platelets
3. 1:1 plasma and RBCs
4. (tie) Plasma (liquid, thawed, dried) or RBCs alone
8. Hextend

Why Not These Fluids?

- Albumin – not recommended for casualties with TBI
- Voluven
  - More expensive than Hextend
  - Also reported to cause kidney injury
- Normal saline – causes a hyperchloremic acidosis
- Hypertonic saline
  - Volume expansion is larger than NS, but short-lived
  - Found to be not superior to NS in a large study

Tactical Combat Casualty Care Guideline Change 14-02

Revised Tourniquet Guidelines

Col Stacy Shackelford

28 October 2014

Revised Tourniquet Guidelines

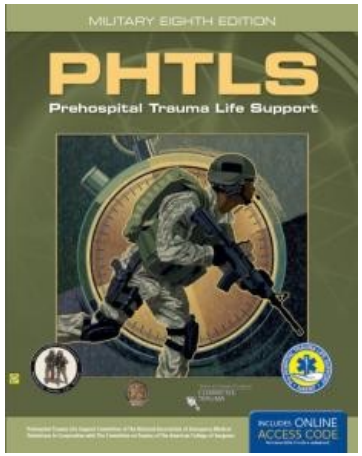
- **Mandatory 2-hour check**
  - **Extremity lost to an 8-hour tourniquet**
  - **Incorrect “never take TQ off in the field” taught at the unit’s “TCCC” course**
- **Tourniquet placement**
  - **“High and tight” if unable to clearly see the source of the bleeding**

TCCC Guidelines: Proposed Changes 2015

- **Ondansetron instead of promethazine for nausea and/or vomiting**
  - **LCDR Dana Onifer**
- **Cric-Key for surgical airways**
  - **LTC Bob Mabry**
- **Abdominal Aortic Junctional Tourniquet**
  - **COL Samual Sauer**
- **XSTAT**
  - **SGMs Sims and Bowling; MSG Montgomery**
- **iTClamp**
  - **Dr. Don Jenkins**

TCCC Strategic Messaging

The Special Operations Medical Association's Official Journal
JSOM
JOURNAL of SPECIAL OPERATIONS MEDICINE
THE JOURNAL FOR OPERATIONAL MEDICINE AND COMBAT CASUALTY CARE
Dedicated to the Indomitable Spirit and Sacrifices of the SOF Medic
A Peer-Reviewed Journal that Brings Together the Global Interests of Special Operations' First Responders

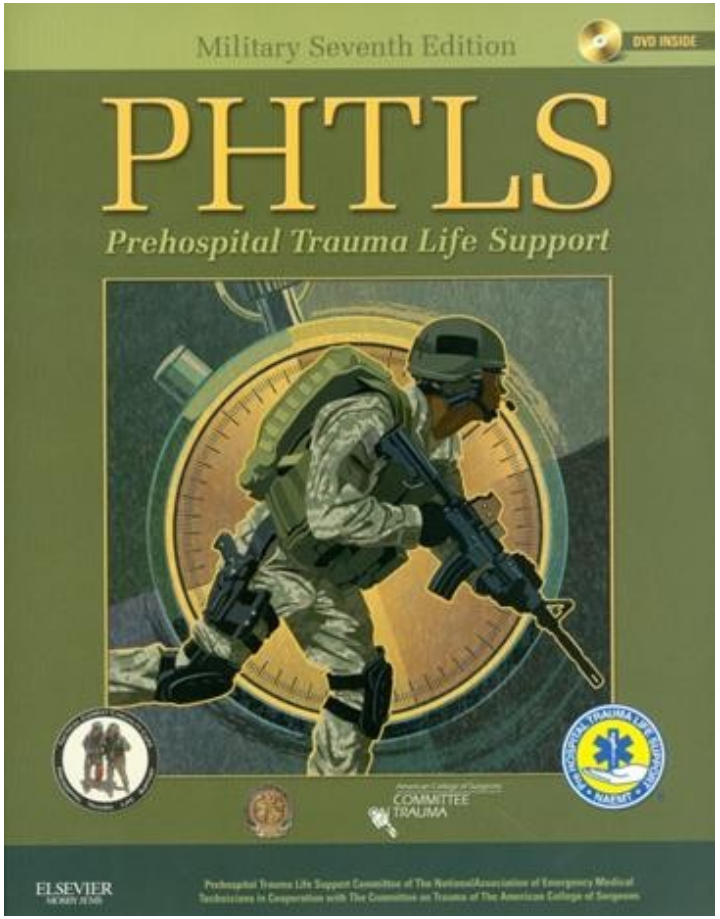


- **TCCC curriculum now updated yearly**
- **Interim change packages as changes**

TCCC Guidelines: The *What*

TCCC Curriculum: The *How*

MPHTLS Text: The *Why*



"Military units that have trained all of their members in Tactical Combat Casualty Care have documented the lowest incidence of preventable deaths among their casualties

TCCC Distribution List

- TCCC interim change packages
- Quarterly TCCC Journal Watch
- Quarterly TCCC Article Abstracts
- Other TCCC-related items of interest

To be added to the list:

danielle.m.davis.civ@mail.mi

TACEVAC Care: Factors That Improve Survival

- **Critical Care Flight Paramedics vs EMT-Bs on evacuation platforms**
  - **Mabry: Journal of Trauma paper 2012**
- **60-minute maximum evacuation time**
  - **2009 SecDef directive**
- **Advanced capability evacuation platforms**
  - **MERT vs PEDRO and DUSTOFF**
  - **Apodaca and Morrison papers**

Critical-Care Flight Paramedics

Mabry, J Trauma 2012

PRE-HOSPITAL CLINICAL RESEARCH

Impact of critical care–trained flight paramedics on casualty survival during helicopter evacuation in the current war in Afghanistan

Robert L. Mabry, MD, MC, Amy Apodaca, MS, Jason Penrod, PharmD, Jean A. Orman, ScD, MPH, Robert T. Gerhardt, MD, MPH, *and* Warren C. Dorlac, MD, *Fort Sam Houston, Texas*

- **Trauma patients with ISS of 16 or higher**
- **2 cohorts – CCFP vs EMT-B in Army MEDEVAC**
- **Same geographic area in Afghanistan; 2007-2010**
- **EMT-B cohort (n=469) had 15% 48-hr mortality**
- **CCFP cohort (n=202) had 8% 48-hr mortality**
- **New Army MEDEVAC standard is CCFP**

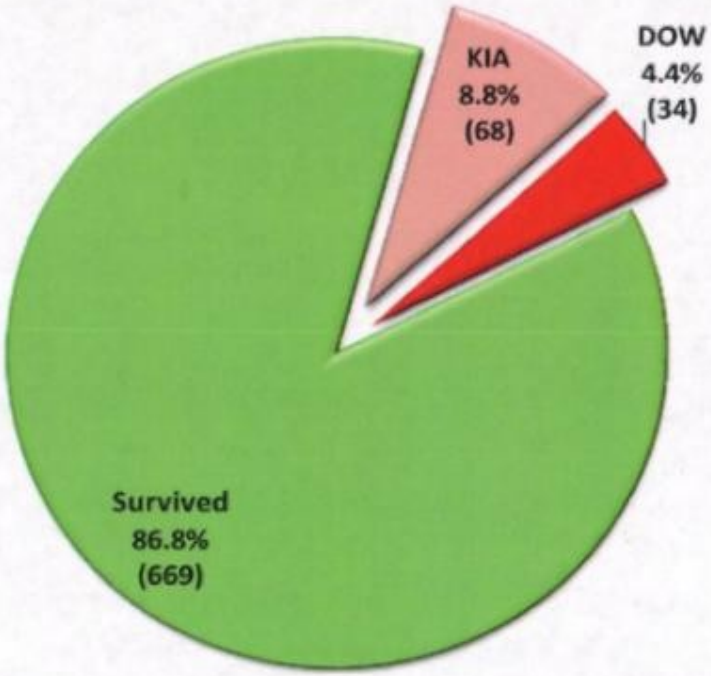
Medical Evacuation Proponency Directorate
Joint Trauma System Brief
11 February 2014

Tactical Evacuation

COL Russ S. Kotwal, MD MPH FAAFP

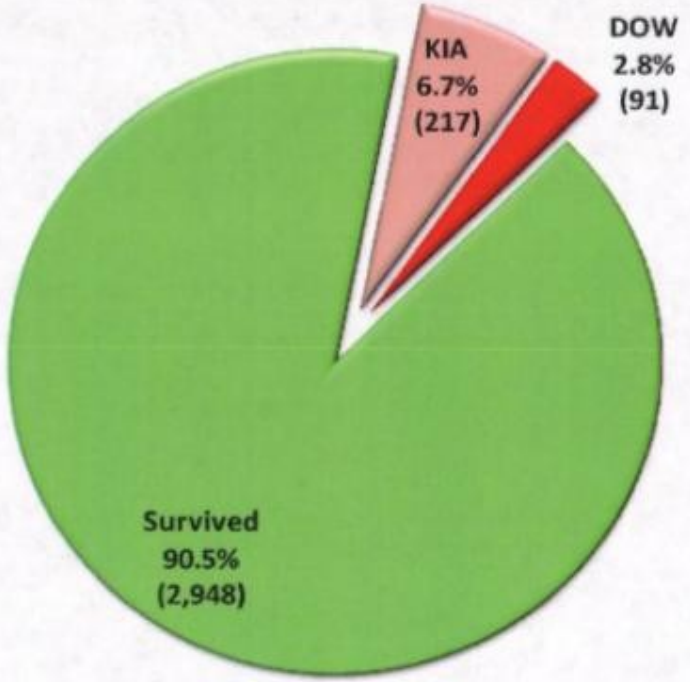
Golden Hour Directive
(N = 4,027)

Before Jun 15, 2009
Goal < 90 min, Actual Median 90 min
(n = 771)



Golden Hour Directive

Jun 15, 2009 and After
Goal < 60 min, Actual Median 42 min
(n = 3,256)



Difference in KIA, Pre 9.5% (68/703) vs Post 7.1% (217/3,039), is **statistically significant, $p = 0.0434$**
Difference in DOW, Pre 4.4% (34/737) vs Post 2.8% (92/3,165), is **statistically significant, $p = 0.0271$**
Difference in Total Died (KIA + DOW), Pre 13.9% (101/669) vs Post 9.9% (327/3,256), is **statistically significant, $p = 0.0023$**

Trauma and Injury Subcommittee

Frank Butler, MD
Defense Health Board
14 June 2011

TACEVAC Discussion

- **MEDEVAC: Red Cross-marked dedicated air ambulance – no guns, no armor**
- **CASEVAC – tactical aircraft - no Red Crosses but HAVE guns and armor**
- **TACEVAC – includes both MEDEVAC and CASEVAC**

Theater TACEVAC Capabilities

- **DUSTOFF**
  - **Army**
  - **HH-60**
  - **One EMT-B flight medic**
- **PEDRO**
  - **USAF**
  - **HH-60G**
  - **Two PJs (paramedics)**
  - **Relatively limited in num**
- **UK MERT**

UK Medical Emergency Response Team (MERT)

- **Ch-47**
- **EM or Critical Care physici**
- **2 EMT-Ps and Crit Care Nur**
- **<u>Routine</u> plasma:PRBCs in flight when needed**
- **Advanced airways and RSI**
- **Ketamine analgesia**
- **Chest tubes and thoracotomies with aortic cross-clamping**
- **Tranexamic acid**
- **Only one: used for most critical**

Advanced Capability Evacuation Platforms Apodaca – J Trauma 2012

ORIGINAL ARTICLE

Performance improvement evaluation of forward aeromedical evacuation platforms in Operation Enduring Freedom

Amy Apodaca, PhD, Chris M. Olson, Jr., PhD, Jeffrey Bailey, MD, Frank Butler, MD, Brian J. Eastridge, MD, *and* Eric Kuncir, MD, MS, *San Antonio, Texas*

- **MERT (n = 543) vs PEDRO (n = 326) vs DUSTOFF n = 106)**
- **Overall casualty survival rate – no differences**
- **ISS of 20-29: MERT mortality: 4.8%**

Advanced Capability Evacuation Platforms Morrison – Ann Surg 2013

ORIGINAL ARTICLE

En-Route Care Capability From Point of Injury Impacts Mortality After Severe Wartime Injury

Jonathan J. Morrison, MRCS,† John Oh, MD,‡ Joseph J. DuBose, MD,§ David J. O'Reilly, MRCS,† Robert J. Russell, FCEM,¶ Lorne H. Blackbourne, MD,* Mark J. Midwinter, MD, FRCS,† and Todd E. Rasmussen, MD*||***

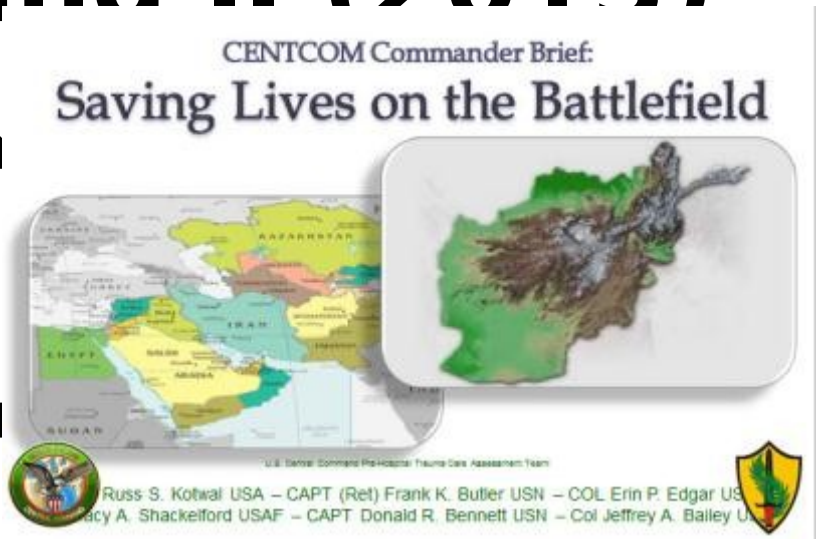
- **ISS 1-15** **No difference in survival**
- **ISS 16-50** **MERT mortality: 12.2%**
  PEDRO/DUSTOFF mortality: 18.2%

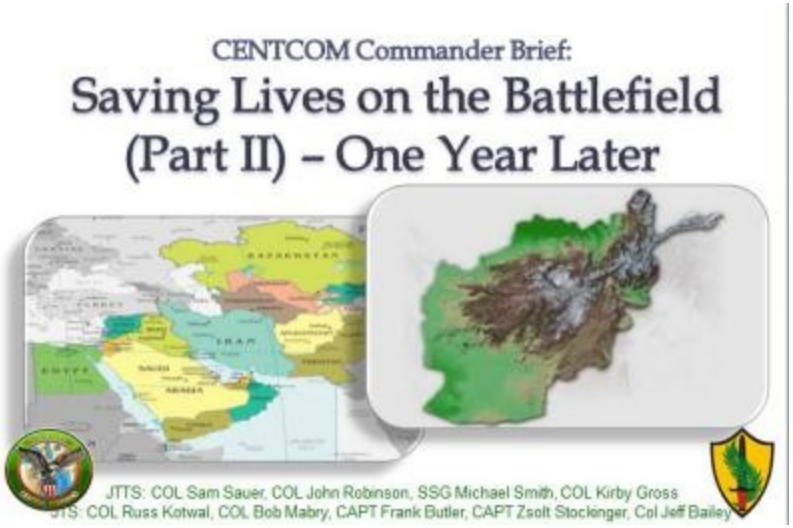
Improving TACEVAC Care Defense Health Board Memo 8 August 2011

- **Develop a U.S. advanced TACEVAC care capability**
- **Flight medical attendants CCFP or higher**
- **Routine availability of RBCs and plasma on evacuation platforms**
- **Ensure that medical attendants and supervising physicians are both trained and experienced in trauma care**
- **Improved TACEVAC care documentation**
- **And more**

Saving Lives on the Battlefield I (2012) and II (2013)

- Surveys of prehospital ca
  in Afghanistan
- Combined Joint Trauma
  System/USCENTCOM tea
- Directed interviews with
  hundreds of physicians,
  PAs, and combat medical
  personnel in combat unit
- COL Russ Kotwal (I)
- COL Samual Sauer (II)


CENTCOM Commander Brief:
Saving Lives on the Battlefield
Russ S. Kotwal USA – CAPT (Ret) Frank K. Butler USN – COL Erin P. Edgar US
cy A. Shackelford USAF – CAPT Donald R. Bennett USN – Col Jeffrey A. Bailey U


CENTCOM Commander Brief:
Saving Lives on the Battlefield
(Part II) – One Year Later
JTTS: COL Sam Sauer, COL John Robinson, SSG Michael Smith, COL Kirby Gross
JTTS: COL Russ Kotwal, COL Bob Mabry, CAPT Frank Butler, CAPT Zsolt Stockinger, Col Jeff Bailey

Findings from the Two CENTCOM/JTS Prehospital Care Assessments

- **TCCC is not being implemented evenly across the battle space**
- **These variations are not just SOF versus conventional forces difference**
- **Why is this happening?**
- **We teach physicians ATLS (maybe) and then assign them to operational units and expect that they can effectively supervise medics who have been taught battlefield trauma care based on TCCC concepts**

From a Senior Army Flight Surgeon

"During my Medical Corps career I received ZERO training from the AMEDD on pre-hospital care. There was no training about or concerning pre-hospital trauma care within the AMEDD Officer Basic Course, the AMEDD Officer Advanced Course, Command and General Staff College and even, realistically, the C4 course. The C4 course (in my era) started at the Role 1. There was some evacuation planning but no mention of actual hands on care standards. So, it is reasonable to expect that my peers who are now senior leaders got the exact same lack of pre-hospital care training. I am an

JTS – SOUTHCOM Telecon: 13 Nov 2014

Senior Enlisted SOF Medic

- **TCCC courses used to train units deploying to SOUTHCOM often use an abridged and altered TCCC curriculum rather than the one found on the official TCCC websites. The curriculum found on the official TCCC websites is often being modified at the unit level by physicians with little or no training in prehospital trauma care.**

Does This Make a Difference for Our Casualties?

- **YES!**
- **The JTS and AFME have an ongoing trauma care Performance Improvement process.**
- **The intent is to identify potentially preventable deaths and adverse outcomes**
- **There are still preventable deaths and adverse outcomes being noted that could have been avoided by adherence to TCCC Guidelines and JTS Clinical Practice Guidelines**

Prehospital – 24% of deaths potentially survivable *(Eastridge 2012)*

Wall Street Journal

19 September 2014

U.S. News

Are U.S. Soldiers Dying From Survivable Wounds? Despite Advances in Care, the Military Failed to Save Some Troops in Iraq and Afghanistan From 'Potentially Survivable' Wounds

By
Michael M. Phillips

The Mabry Question: Who Owns Battlefield Medicine?

- **The U.S. military has four armed services, six Geographic Combatant Commands, and the U.S. Special Operations Command, each of which operates autonomously unless directives are issued by the Secretary of Defense (SecDef).**
- **Lacking direction in the form of SecDef policy and Joint Staff doctrine, there is no assurance that lessons learned in trauma care will be used reliably or consistently across the U.S. military.**
- **The SENIOR LEADER in the chain of**

The Mabry Question: Who Owns Battlefield Medicine?

- **All 3 SGs have endorsed TCCC training for medics**
- **Both the Defense Health Board and the Assistant Secretary of Defense for Health Affairs have recommended TCCC training for <u>everyone</u> (to include physicians and PAs) assigned to deploying combat units – twice.**
- **BUT – battlefield trauma care in combat units is owned by the unit commanders.**
- **Neither the DHB nor ASDHA are in their chain of command.**
- **For TCCC to be effectively incorporated into combat units, it must be an integral part of their warrior culture: shoot, move, communicate, AND**

Military: Line Commander Directed

- U.S. Special Operations Command - 2005
- U.S. Army
- U.S. Navy
- U.S. Marine Corps - 2009
- U.S. Air Force
- U.S. Central Command - 2014
- U.S. Southern Command
- U.S. Pacific Command
- U.S. European Command
- U.S. Africa Command
- U.S. Northern Command

Commander USSOCOM Directive – 22 March 2005

4. USSOCOM COMPONENT COMMANDERS ARE DIRECTED TO ENSURE THAT THEIR DEPLOYING UNITS RECEIVE TRAINING TO INCLUDE ALL OF THE TCCC GUIDELINES IN REF A WITHIN 6 MONTHS OF DEPLOYING ISO COMBAT OPERATIONS. COMMANDERS ARE ALSO DIRECTED TO ENSURE THAT ALL UNIT

MARADMIN 645/09 DTG: 301713Z Oct 09:

TACTICAL CASUALTY COMBAT CARE (TCCC) GUIDELINES AND UPDATES//

5. EFFECTIVE IMMEDIATELY, THE RECENTLY APPROVED TCCC GUIDELINES WILL BECOME THE STANDARD TO WHICH TRAINING EFFORTS SHOULD BE FOCUSED AND EVALUATION WILL BE BASED. THESE CHANGES WILL AFFECT NUMEROUS TRAINING PROGRAMS AND COURSES. EFFORTS ARE ALREADY UNDERWAY TO UPDATE STANDARDS AND WILL BE ACCOMPLISHED THROUGH THE NORMAL STAFFING PROCESS. A KEY ELEMENT OF THE TCCC GUIDELINES IS THEIR

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- **All physicians, physician assistants, nurse practitioners, medics, corpsmen, parajumpers (PJs) and nurses in CJOA-A (Afghanistan) will be trained in TCCC**
- **Training will be done in accordance with current TCCC Guidelines (found on the Joint Trauma System website)**
- **Curriculum to support this training is found on the Military Health System website**
- **Training is reportable to the chain of command**
- **Units will field the equipment to**

Recommendation to Army FORSCOM Surgeon: LTC Bob Mabry 14 Jan 15

- **FORSCOM Commander Directs**
  - **All physicians, physician assistants, nurse practitioners, and medics, assigned to FORSCOM will be trained in TCCC**
  - **Training will be done in accordance with current TCCC Guidelines (found on the Joint Trauma System website)**

USMC
CDR Bill Padgett
CoTCCC Mtg – April 2011

- **CASEVAC requirements and capabilities for the mission at hand are defined and assigned during the planning process. There is not a dedicated CASEVAC capability in the Marine Corps, however the capability is put in place during mission planning by designating personnel and equipment for the requirements identified. The Medical Officer of the Marine Corps does not own medical personnel or equipment, but as a supporting office to the line commanders who own the personnel and equipment, champions CASEVAC policy, processes and resources as part of the Expeditionary Force Development System which converts operational capability gaps or concepts to fielded capabilities that support**

En Route Care:
The Neglected Capability of Care

LCDR BENJAMIN WALRATH

17 APR 2014

This is an Army Mission…

- Current MEDEVAC staffing model is outdated and based on Cold War/Vietnam era doctrine
  - Increased number of post-op critical care patients transported from Role II to Role III
  - Unprecedented numbers of civilian transports
  - Massively injured polytrauma patients who would have died in other conflicts kept alive by TCCC, improved protective equipment, and early surgery

After Action Report Joint Theater Trauma System. Unites States Central Command. LTC Robert Mabry. February 2011.

Case Reports

- Jan 2011: A Marine was injured in an IED blast with bilateral lower extremity amputations and a massive pelvic injury evacuated by a MEDEVAC with a single flight medic. Flight time was 18 minutes. Medic placed an IV and infused Hextend. Patient arrived in extremis after receiving no pain medication and ineffective tourniquets, undressed wounds, no c-collar or pelvic binder. He was immediately intubated and given massive transfusion in the ER.

After Action Report Joint Theater Trauma System. Unites States Central Command. LTC Robert Mabry. February 2011.

Planning for the NEXT War – Not the Last One

- War on terror will continue
- Hostage rescue operations likely to increase
- Increasing emphasis on sea-based operations?
- USMC elements
- May be no Army forces involved
- Who does CASEVAC and what is their training and equipment status?

Thank You!

Questions?